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An analysis of the correlation between high school rank and performance on the A.C.E. (American Council on Education Psychological Examination) administered to freshmen entering Miami University in the fall of 1959, obtained by categorizing students into quartiles on the basis of high school records and then finding the median and range of A.C.E. scores earned by students within the quartiles.

Results showed that there is a correlation only in the top quartile; there is no relationship between class rank and A.C.E. performance for students graduating in the lower three quartiles of their high school class. In each quartile there is a wide range of scores on the A.C.E. test reflecting the presence of both under- and overachievers.

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Vol. I, Report No. 5

RELATIONSHIP BETWEEN HIGH SCHOOL CLASS RANK AND A. C. E. PERFORMANCE FOR MIAMI UNIVERSITY FRESHMAN (1959-1960)

Institutional Research Service
March, 1960

INTRODUCTION

This report presents an analysis of the relationship between high school rank and performance on the ACE for freshmen entering Miami University in the fall of 1959.

The question to which these data are addressed is: Are our freshmen who have a favorable past history of academic achievement (in high school) more capable scholastically than our freshmen who have an unfavorable past history of academic achievement? This question has some bearing upon the value of high school grades for predicting subsequent performance at Miami University.

Procedure.

Each student was categorized into one of four quartiles on the basis of standing in his high school graduating class. The median ACE score and the range of ACE scores earned by students within each of these quartiles was then computed.

The Students in the Sample.

Twenty-two hundred five (2205) Miami University freshmen for whom total ACE scores and high school class standing were available were included in this analysis. The distribution of these students, by quartile, within their high school graduating class was as follows:

Quartile	No. of Freshmen	Percentage of Freshmen
I (Upper 25%	1003	45%
II	713	32%
III	333	15%
IV (Lowest 25%)	156	7%

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RESULTS

The median ACE total score of students in each quartile is shown below.

Quartile	Median ACE Total Percentile Rank
I	70.54
II	53.61
III	51.85
IV	48.17

Thus, our freshmen who graduated in the top quarter of their high school class possess a high level of scholastic aptitude. Their median ACE performance exceeded that of 70% of the standardization group. Rank in the high school graduating class is not a useful index of academic ability, however, for students in the three lower quartiles.

There is a considerable range of ACE performance within each quartile position. Table I shows the distribution of ACE scores as a function of quartile rank in the high school graduating class. This Table shows, for example, that six percent of the freshmen who ranked in the lowest quarter of their high school class scored within the highest decile of the ACE, whereas 19 percent of those in the top quarter of their class achieved this level.

TABLE I.

Score on the ACE as a Function of Rank in the High School Graduating Class

ACE Decile	Student Rank in High School Graduating Class			
	Top Quartile	Second Quartile	Third Quartile	Bottom Quartile
90-99	19%	08%	05%	06%
80-89	18	10	11	11
70-79	15	11	11	08
60-69	13	12	11	14
50-59	12	13	15	10
40-49	08	13	14	10
30-39	05	12	11	06
20-29	05	08	09	14
10-19	03	09	06	13
00-09	01	03	07	07

SUMMARY

1. More than 75 percent of the Miami University freshmen were graduated in the upper half of their high school class.

2. Class rank in high school is related to performance on the ACE only for those students who ranked in the top quarter of their graduating class. There is no relationship between class rank and ACE performance for students graduating in the lower three quartiles of their high school class.

3. There is a wide range of ACE performance in each quartile, reflecting the presence of both under- and over-achievers. There are students in the top quartile of their graduating classes scoring in the lowest ACE decile, as well as students in the lowest quartile of their graduating classes who score within the highest ACE decile.

4. In spite of the exceptions noted in statement (3) above, it is quite clear that students who graduate in the top quarter of their high school class are the best "academic risks." These students comprised 45% of the Miami freshman class in September, 1959.

This general conclusion is valid regardless of the factors of residence status or size of the high school from which students were graduated.